

Fig. 1

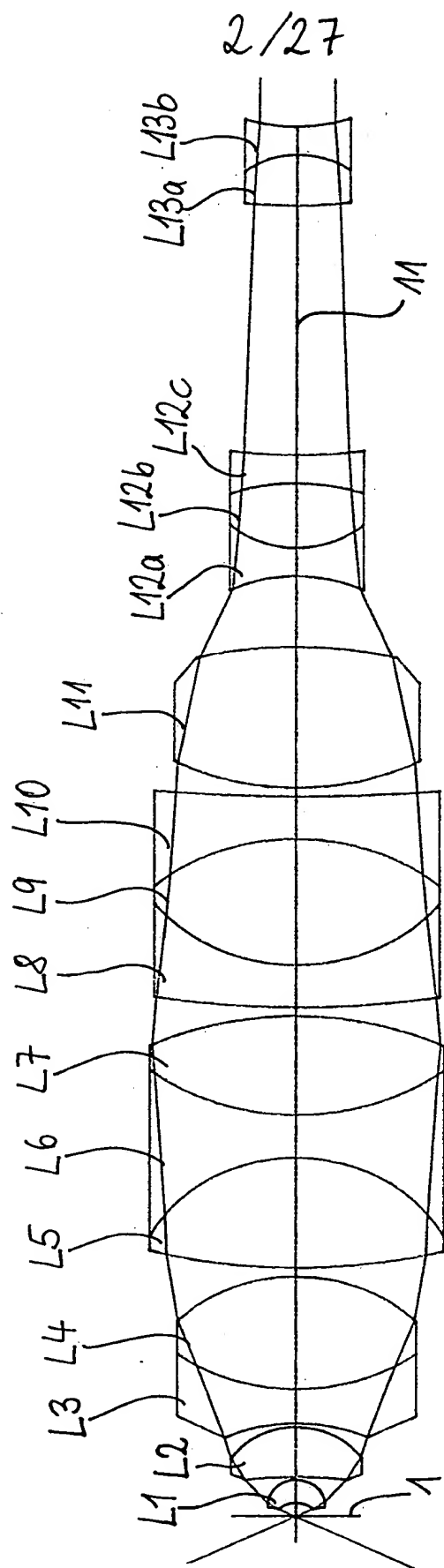


Fig. 2

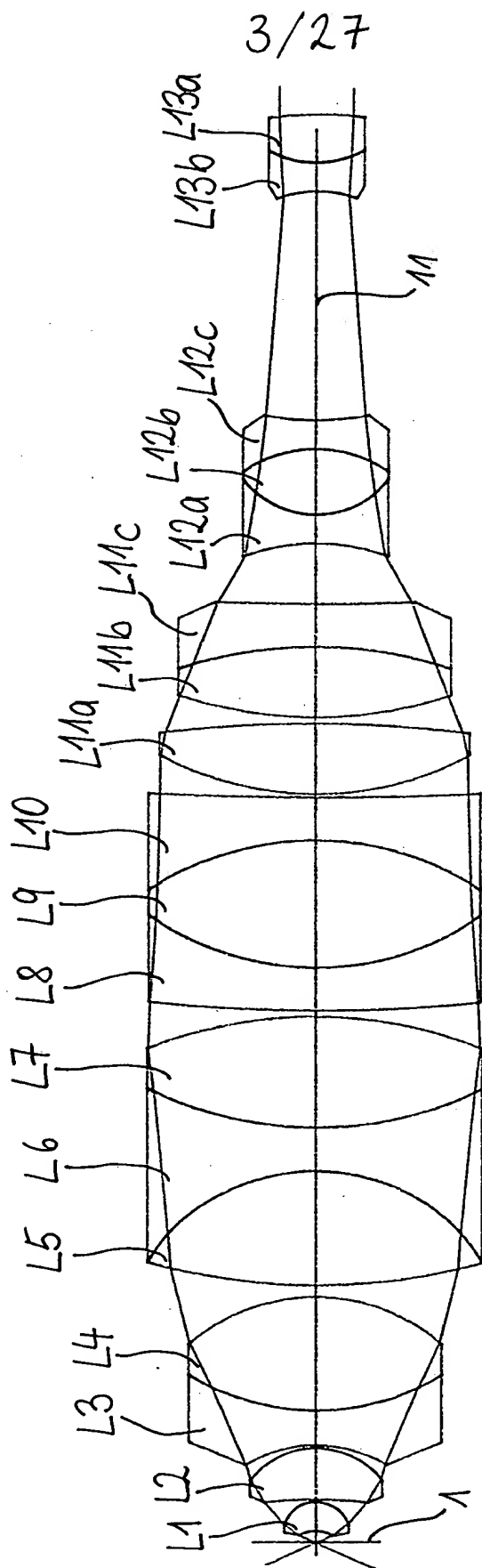


Fig. 3

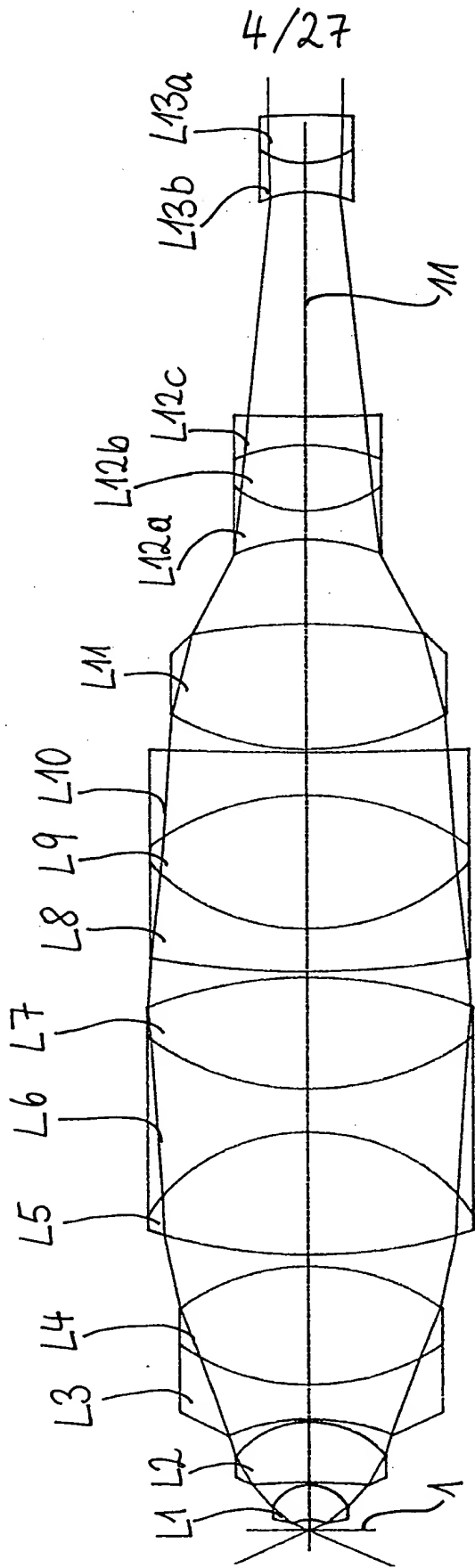


Fig. 4

5/27

Table 1:

125x/0.90 objective of Fig. 1; focal length $f = 1.6$ mm;
 parfocal focus at $\lambda_{\text{DUV}} = 248$ nm, $\lambda_{\text{IR}} = 760$ nm;

Surface	Radius	Spacing	Glass type
1	Plane surface	.4424	
2	-.7759	.8568	Quartz glass
3	-.9149	.1000	
4	-14.1404	1.7790	CaF ₂
5	-2.6823	.1500	
6	-8.4514	1.2000	Quartz glass
7	6.6947	4.0000	CaF ₂
8	-5.4651	.3000	
9	23.3873	3.0000	CaF ₂
10	-5.2007	1.5000	Quartz glass
11	6.5944	3.3000	CaF ₂
12	-9.8177	.3000	
13	55.5878	1.5000	Quartz glass
14	6.9453	4.7000	CaF ₂
15	-5.5509	1.5000	Quartz glass
16	46.0867	.5000	
17	8.0439	3.6991	CaF ₂
18	-7.9818	1.5000	Quartz glass
19	-15.3526	2.4491	
20	-4.5852	1.0000	Quartz glass
21	4.9685	1.8000	CaF ₂
22	17.1649	10.5044	
23	35.5703	1.8000	Quartz glass
24	-3.9748	1.0000	CaF ₂
25	11.7442		

Fig. 5

001250-9048550

6/27

Table 2:

150x/0.90 objective of Fig. 2; focal length $f = 1.33$ mm;
parfocal focus at $\lambda_{\text{DUV}} = 248$ nm, $\lambda_{\text{IR}} = 825$ nm;

Surface	Radius	Spacing	Glass type
1	Plane surface	.4715	
2	-.7980	.8200	Quartz glass
3	-.9220	.1000	
4	-13.2322	1.7655	CaF ₂
5	-2.5295	.1300	
6	-5.4990	1.2000	Quartz glass
7	6.4887	4.0000	CaF ₂
8	-5.4508	.3000	
9	19.0418	3.9000	CaF ₂
10	-5.4344	1.5000	Quartz glass
11	7.8911	3.5000	CaF ₂
12	-11.1917	.3000	
13	28.4123	1.5000	Quartz glass
14	5.9362	4.5000	CaF ₂
15	-7.1436	1.5000	Quartz glass
16	53.0171	.3000	
17	8.6308	5.0000	CaF ₂
18	-13.7614	2.5134	
19	-4.8385	1.0000	Quartz glass
20	3.2133	2.3000	CaF ₂
21	-6.5982	1.0000	Quartz glass
22	15.8712	8.7871	
23	16.0258	1.8000	Quartz glass
24	-2.7600	1.0000	CaF ₂
25	5.6344		

Fig. 6

00T290" 90486560

7/27

Table 3:

150x/0.90 objective of Fig. 3; focal length $f = 1.33$ mm;
parfocal focus at $\lambda_{\text{DUV}} = 248$ nm, $\lambda_{\text{IR}} = 885$ nm;

Surface	Radius	Spacing	Glass type
1	Plane surface	.3978	
2	-1.0391	1.0168	Quartz glass
3	-1.0795	.1000	
4	-12.0535	1.7830	CaF ₂
5	-2.5872	.1000	
6	-4.1758	1.2000	Quartz glass
7	7.1597	4.0100	CaF ₂
8	-5.7651	.4000	
9	18.3192	4.0100	CaF ₂
10	-6.0823	1.5000	Quartz glass
11	11.0395	3.9100	CaF ₂
12	-13.2977	.2000	
13	45.5404	1.5000	Quartz glass
14	8.4487	4.5200	CaF ₂
15	-8.8498	1.5000	Quartz glass
16	97.3172	.1000	
17	9.4897	2.5000	CaF ₂
18	-36.7659	.2000	
19	12.4177	2.5000	CaF ₂
20	-12.5815	1.5000	Quartz glass
21	70.4961	2.1332	
22	-6.0761	1.0000	Quartz glass
23	2.8129	2.3200	CaF ₂
24	-3.8598	1.0000	Quartz glass
25	8.5312	8.0000	
26	-3.4258	1.0100	CaF ₂
27	3.0950	1.7000	Quartz glass
28	-9.3744		

Fig. 7

007230" 90486560

8/27

Table 4:

150x/0.90 objective of Fig. 4; focal length $f = 1.33$ mm;
 parfocal focus at $\lambda_{\text{DUV}} = 248$ nm, $\lambda_{\text{IR}} = 905$ nm;

Surface	Radius	Spacing	Glass type
1	Plane surface	.3616	
2	-1.3020	1.2200	Quartz glass
3	-1.3020	.1000	
4	-17.6430	2.1000	CaF ₂
5	-3.0030	.1000	
6	-6.5030	1.2000	Quartz glass
7	6.8830	4.1600	CaF ₂
8	-6.6690	.4000	
9	16.0110	4.3100	CaF ₂
10	-6.0840	1.5000	Quartz glass
11	8.3030	3.9100	CaF ₂
12	-13.4630	.2000	
13	27.1870	1.5000	Quartz glass
14	6.7340	4.7200	CaF ₂
15	-8.1590	1.5000	Quartz glass
16	124.0130	.1000	
17	8.4150	4.4000	CaF ₂
18	-19.5190	2.9750	
19	-5.5020	1.0000	Quartz glass
20	3.5790	2.3200	CaF ₂
21	-5.7860	1.0000	Quartz glass
22	57.9860	7.8000	
23	-3.5800	1.0100	CaF ₂
24	2.5570	1.7000	Quartz glass
25	-17.9020		

Fig. 8

09598406-062100

9/27

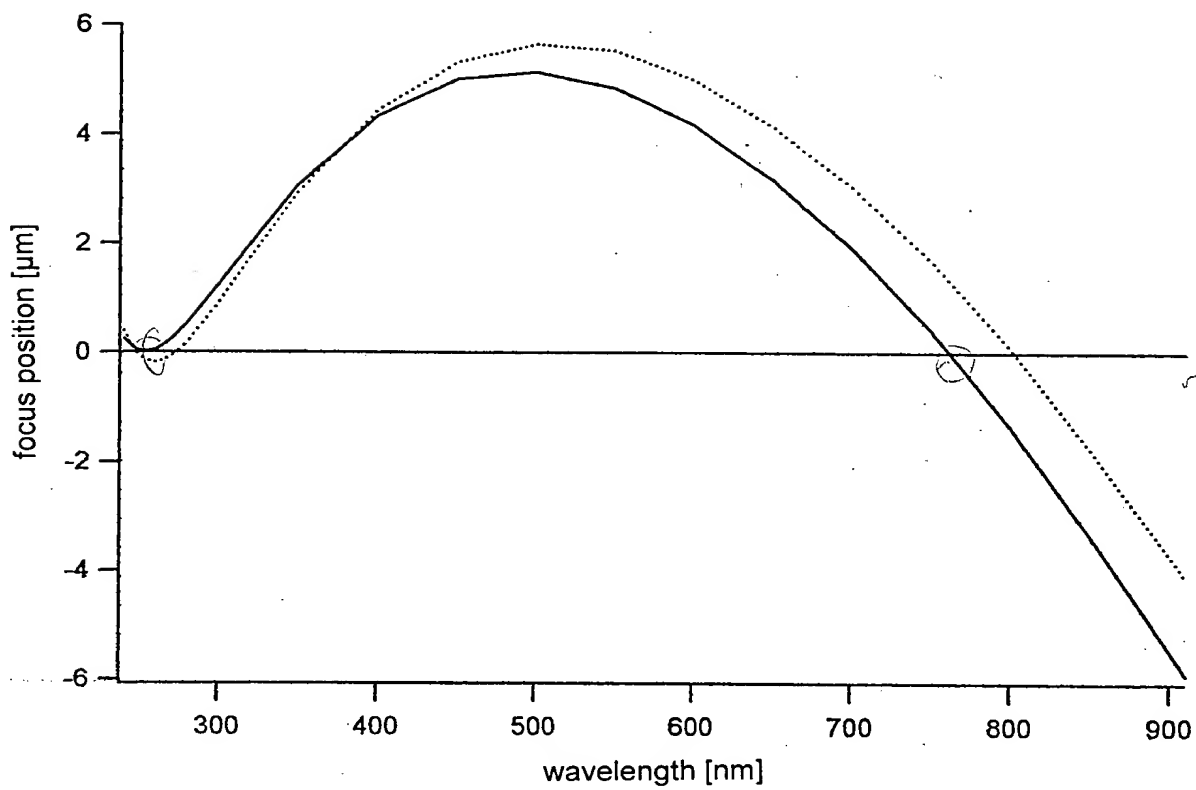


Fig. 9

00T290" 90486560

10/27

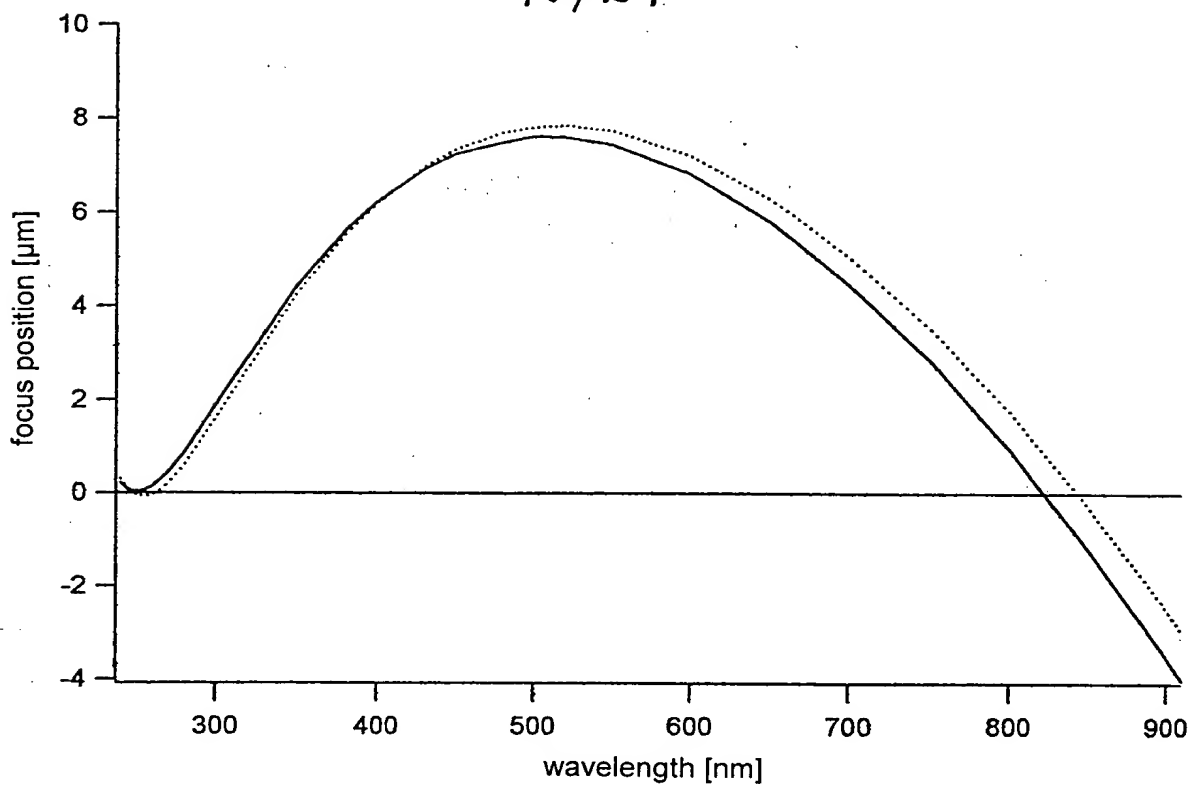


Fig. 10

007290-90485560

11/27

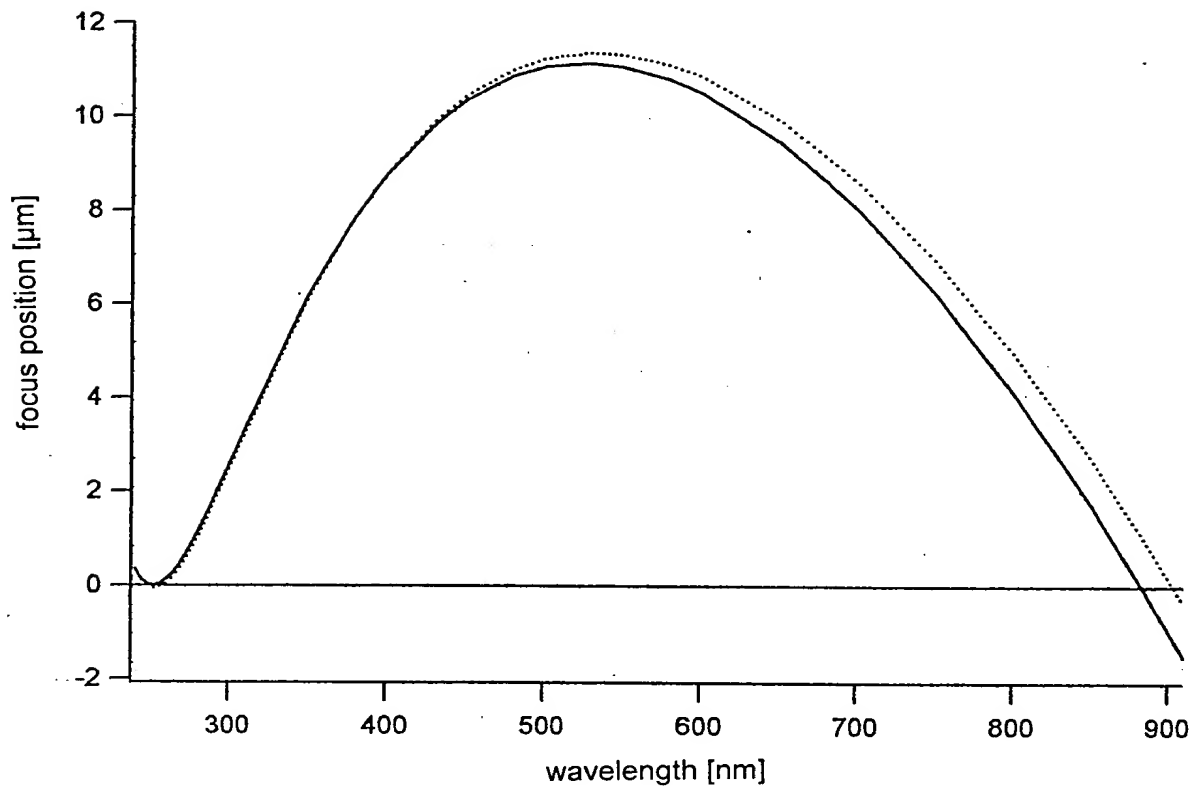


Fig. 11

001290-90486560

12/27

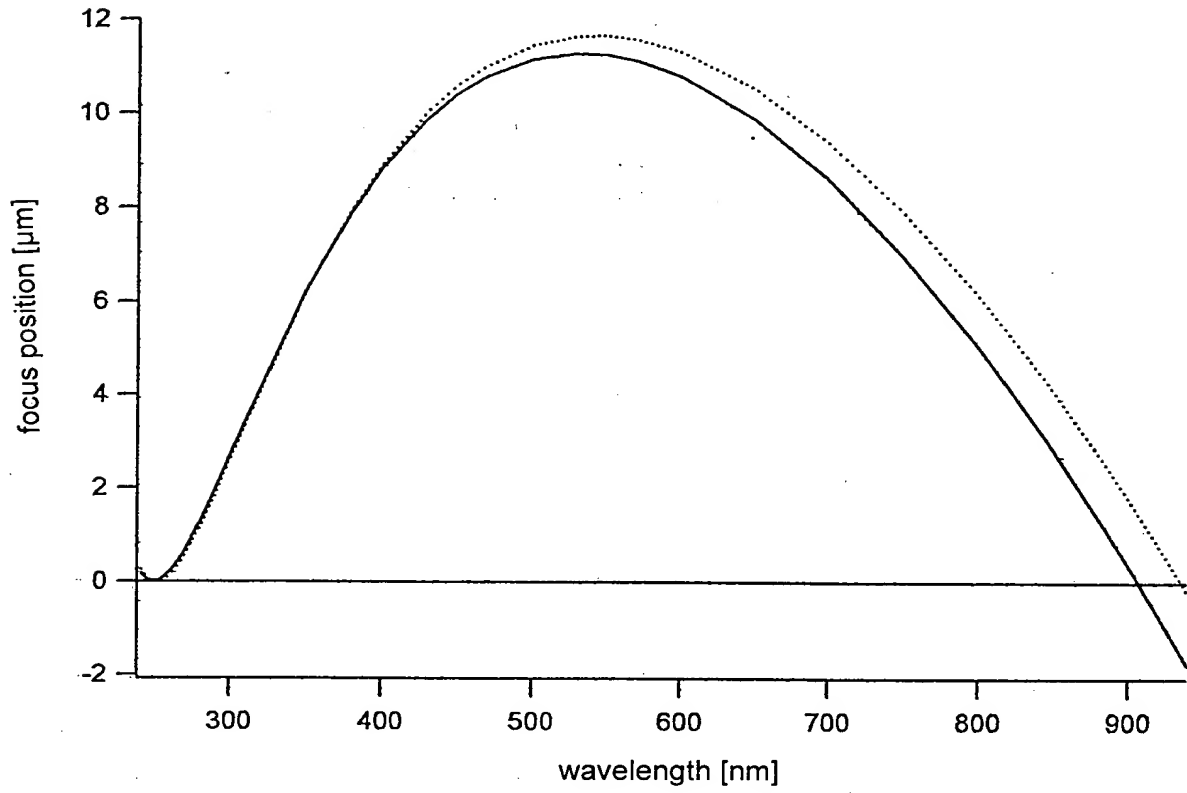


Fig. 12

001250" 90426560

13/27

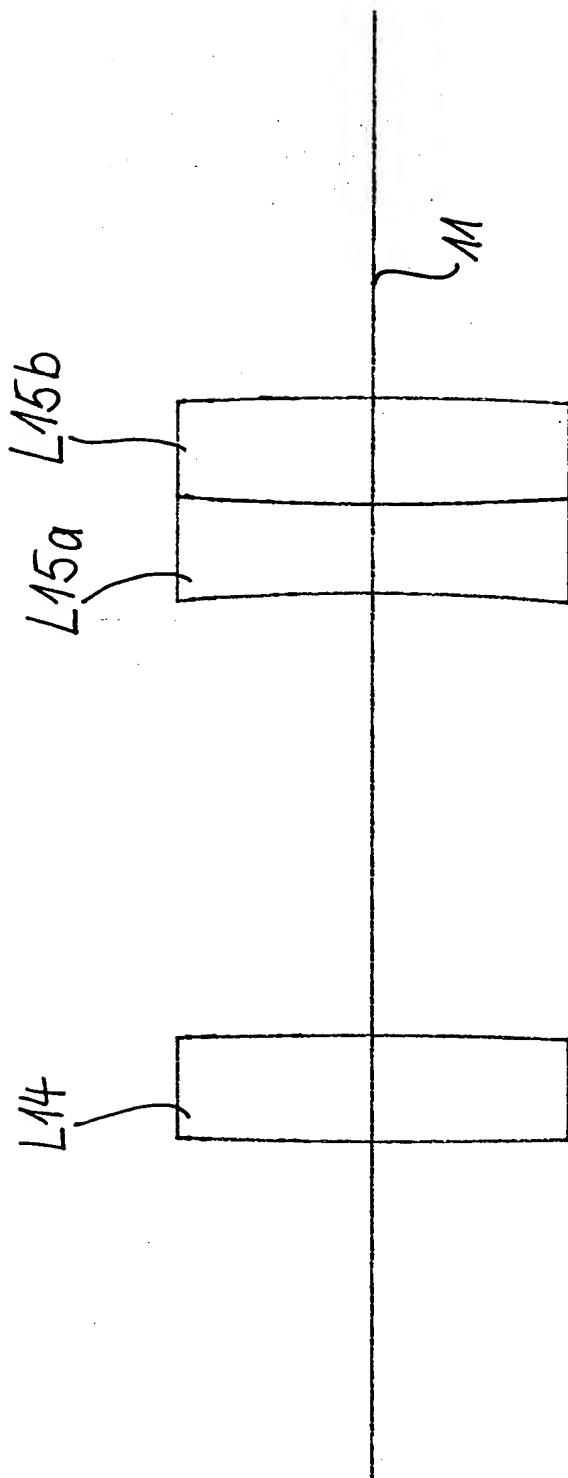


Fig. 13

14/27

Table 5:

Tube lens with focal length $f = 200$ mm, compensated for $\lambda_{\text{DUV}} = 248$ nm;

Surface	Radius	Spacing	Glass type
1	135.2310	3.0000	Quartz glass
2	-135.2310	12.4700	
3	-52.0050	2.5000	CaF ₂
4	63.5370	3.0000	Quartz glass
5	-91.1040	180.0000	
6	Plane surface		

Fig. 14

001230-90436560

15/27

007250" 90486560

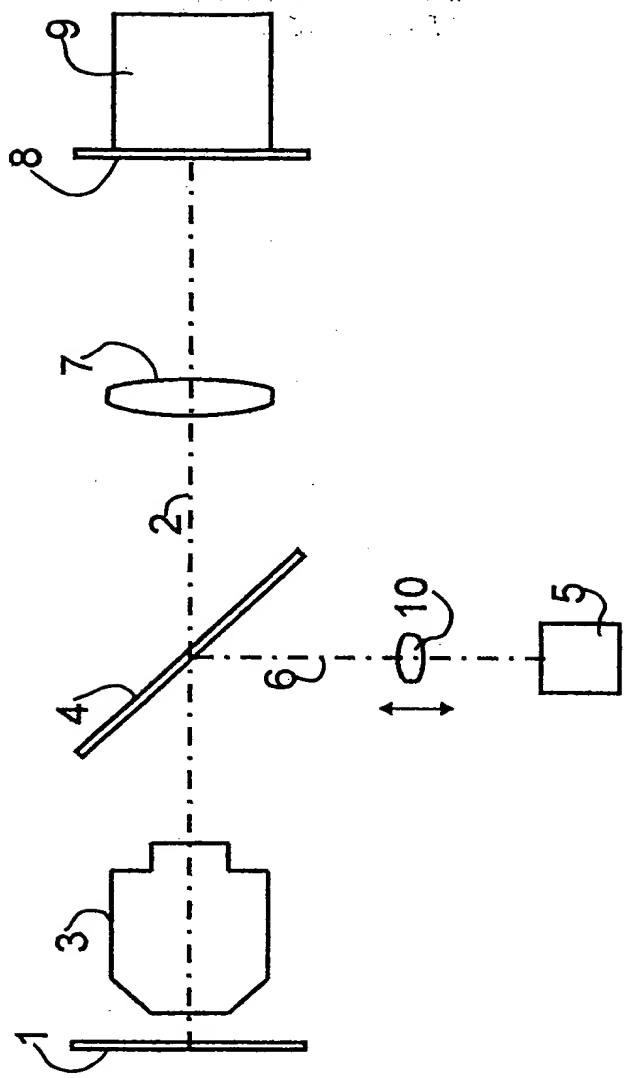
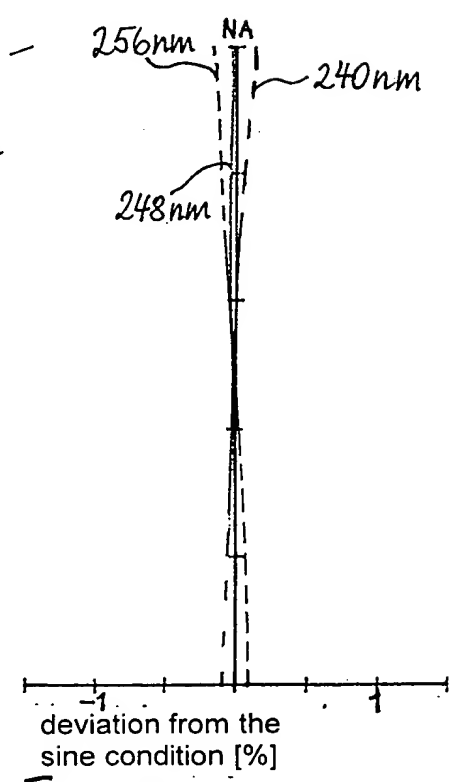
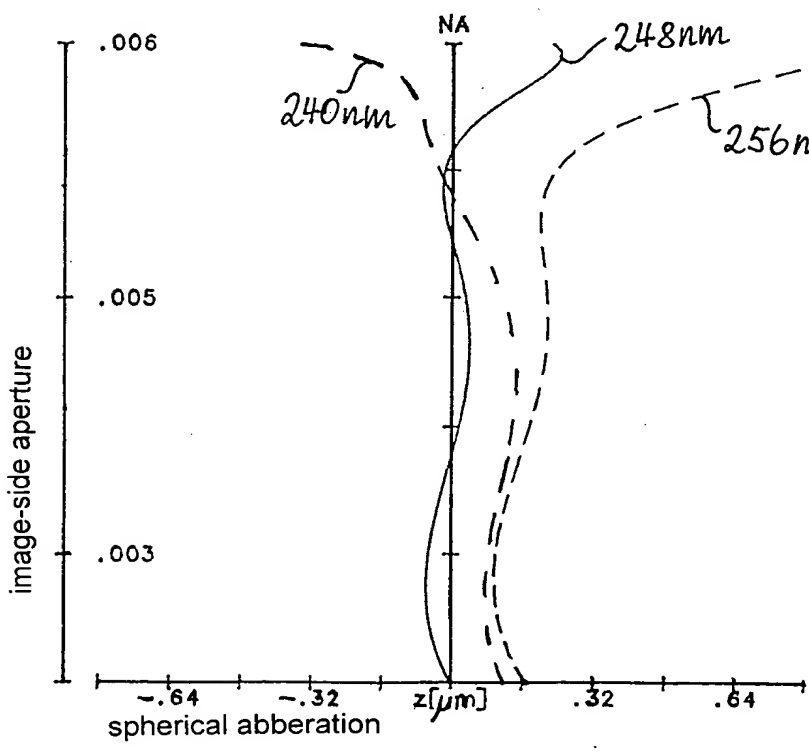
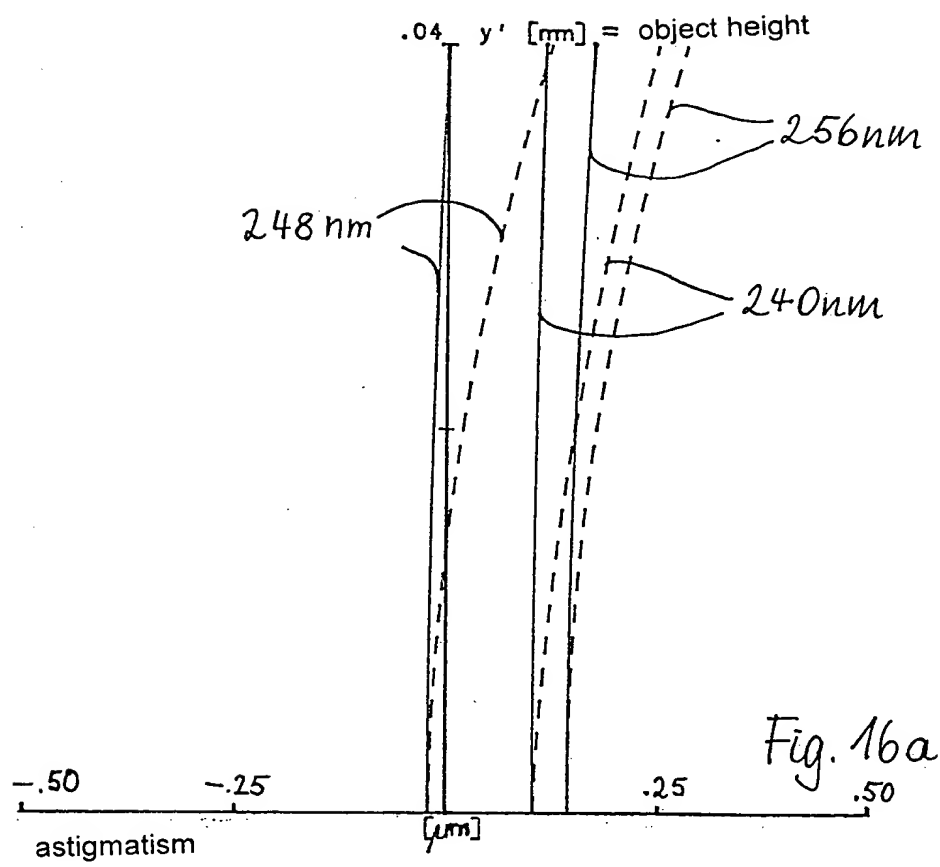


Fig. 15

16/27



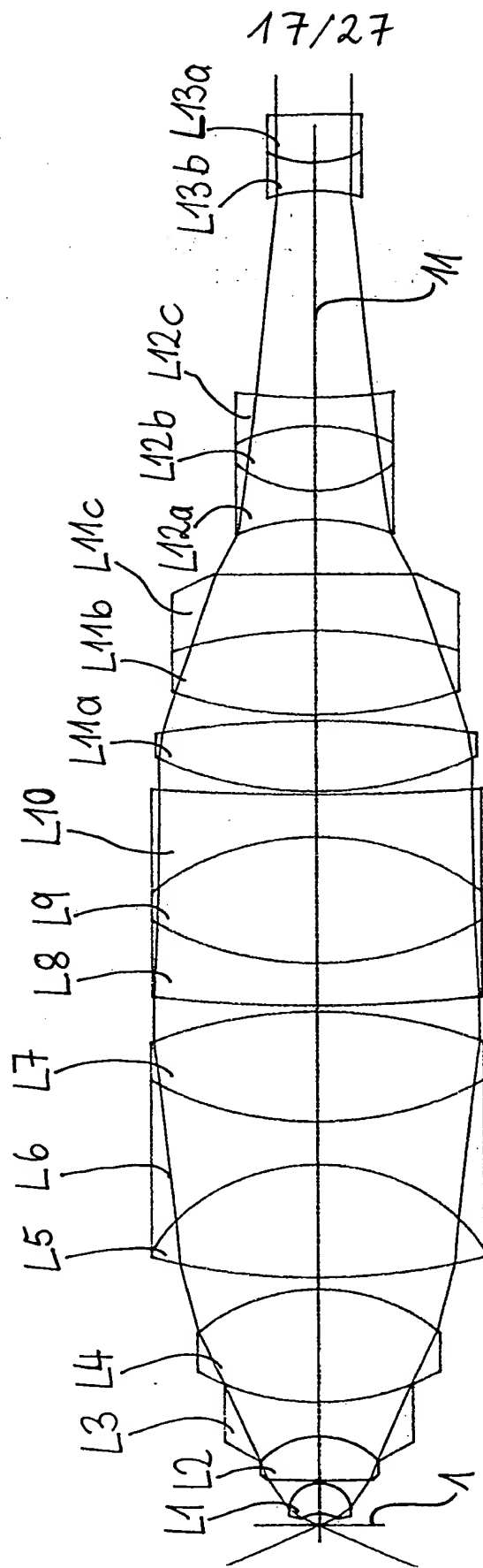


Fig. 17

18/27

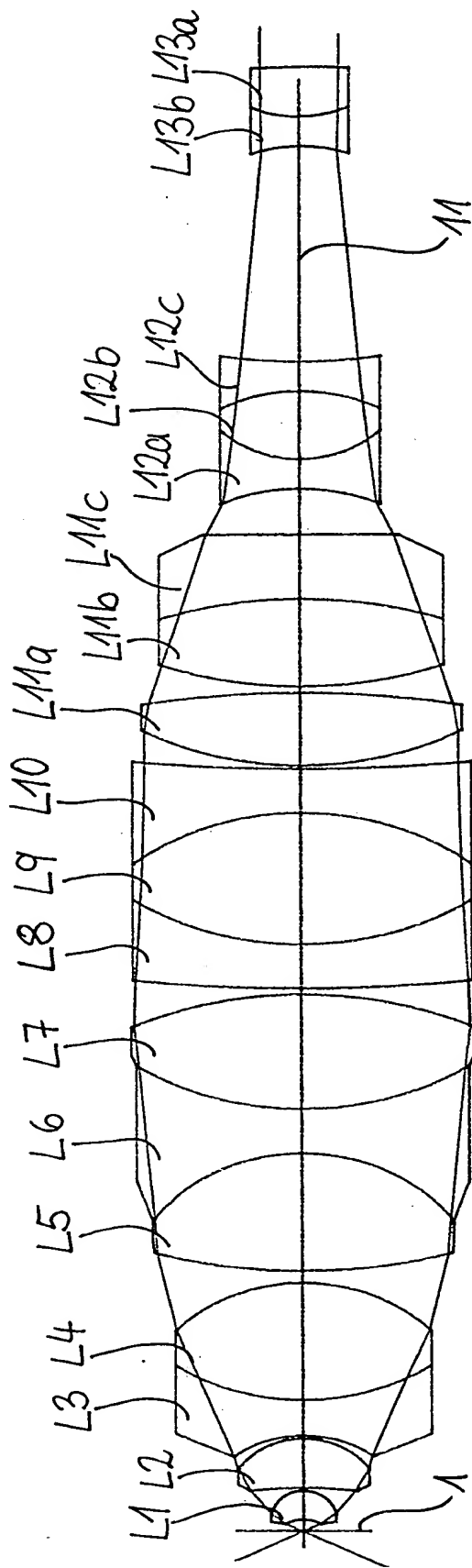


Fig. 18

19/27

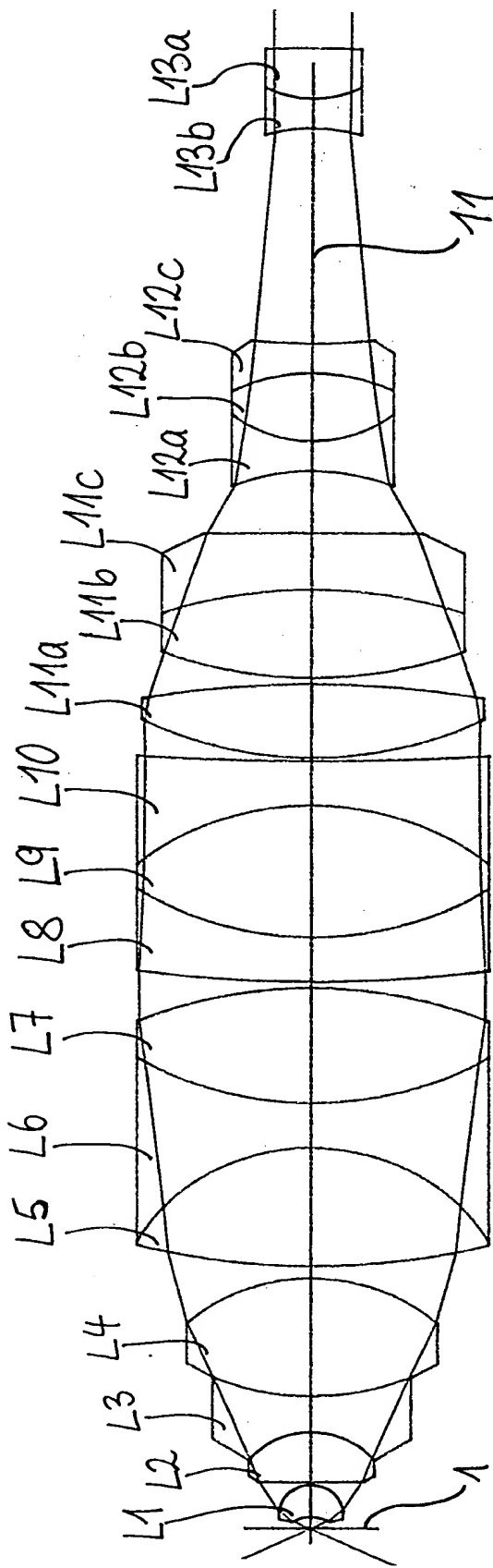


Fig. 19

20/27

Table 6:

150x/0.90 objective of Fig. 17; focal length $f = 1.33$ mm;
parfocal focus at $\lambda_{\text{DUV}} = 266$ nm, $\lambda_{\text{IR}} = 780$ nm;

Surface	Radius	Spacing	Glass type
1	Plane surface	.4004	
2	-1.1202	1.0852	Quartz glass
3	-1.0087	.1000	
4	49.3954	1.5523	CaF ₂
5	-2.4823	1.2000	Quartz glass
6	7.3997	4.0000	CaF ₂
7	-5.5523	.4000	
8	19.0870	4.0000	CaF ₂
9	-6.1526	1.5000	Quartz glass
10	10.1480	3.9000	CaF ₂
11	-13.4739	.2000	
12	40.8014	1.5000	Quartz glass
13	9.6623	4.5000	CaF ₂
14	-8.0263	1.5000	Quartz glass
15	67.3707	.1000	
16	11.0979	2.5000	CaF ₂
17	-29.5998	.2000	
18	12.8003	3.0000	CaF ₂
19	-14.4505	2.0000	Quartz glass
20	-731.5254	1.9420	
21	-6.2505	1.0000	Quartz glass
22	3.7350	2.3000	CaF ₂
23	-5.4666	1.0000	Quartz glass
24	16.8497	7.2445	
25	-4.7127	1.0000	CaF ₂
26	3.2030	1.7000	Quartz glass
27	-76.4922		

Fig. 20

001290-90486560

Table 7:

150x/0.90 objective of Fig. 18; focal length $f = 1.33$ mm;
parfocal focus at $\lambda_{\text{DUV}} = 266$ nm, $\lambda_{\text{IR}} = 785$ nm;

Surface	Radius	Spacing	Glass type
1	Plane surface	.3913	
2	-1.0196	.9862	Quartz glass
3	-1.0164	.1000	
4	-13.2444	1.6752	CaF ₂
5	-2.4758	.1000	
6	-3.5785	1.2000	Quartz glass
7	7.1241	4.0100	CaF ₂
8	-5.5472	.4000	
9	17.3980	4.0100	CaF ₂
10	-5.8544	1.5000	Quartz glass
11	9.6704	3.9100	CaF ₂
12	-13.1275	.2000	
13	48.8685	1.5000	Quartz glass
14	9.6857	4.5200	CaF ₂
15	-8.6827	1.5000	Quartz glass
16	54.4105	.1000	
17	10.6335	2.5000	CaF ₂
18	-29.6393	.2000	
19	13.2319	3.0000	CaF ₂
20	-14.2067	2.2117	Quartz glass
21	-767.1858	1.5628	
22	-6.0019	1.0000	Quartz glass
23	3.5393	2.3200	CaF ₂
24	-5.3970	1.0000	Quartz glass
25	14.9886	7.3016	
26	-4.5195	1.0100	CaF ₂
27	3.4871	1.7000	Quartz glass
28	-31.4479		

Fig. 21

007290" 9048560

Table 8:

150x/0.90 objective of Fig. 19; focal length $f = 1.33$ mm;
parfocal focus at $\lambda_{\text{DUV}} = 266$ nm, $\lambda_{\text{IR}} = 845$ nm;

Surface	Radius	Spacing	Glass type
1	Plane surface	.3853	
2	-1.1597	1.0912	Quartz glass
3	-1.0066	.1000	
4	153.0501	1.6852	CaF ₂
5	-2.4795	1.2000	Quartz glass
6	7.5483	4.0000	CaF ₂
7	-5.6057	.4000	
8	20.5139	4.0000	CaF ₂
9	-6.2094	1.5000	Quartz glass
10	10.1688	3.9000	CaF ₂
11	-13.5130	.2000	
12	37.7683	1.5000	Quartz glass
13	9.5611	4.5000	CaF ₂
14	-8.2853	1.5000	Quartz glass
15	79.4258	.1000	
16	11.1475	2.5000	CaF ₂
17	-29.0722	.2000	
18	12.4744	3.0000	CaF ₂
19	-13.8729	1.9205	Quartz glass
20	-380.5331	2.1110	
21	-6.3024	1.0000	Quartz glass
22	3.8900	2.3000	LiF
23	-5.5040	1.0000	Quartz glass
24	18.3383	7.2255	
25	-4.7881	1.0000	CaF ₂
26	3.1827	1.7000	Quartz glass
27	-45.2603		

Fig. 22

007290" 90426560

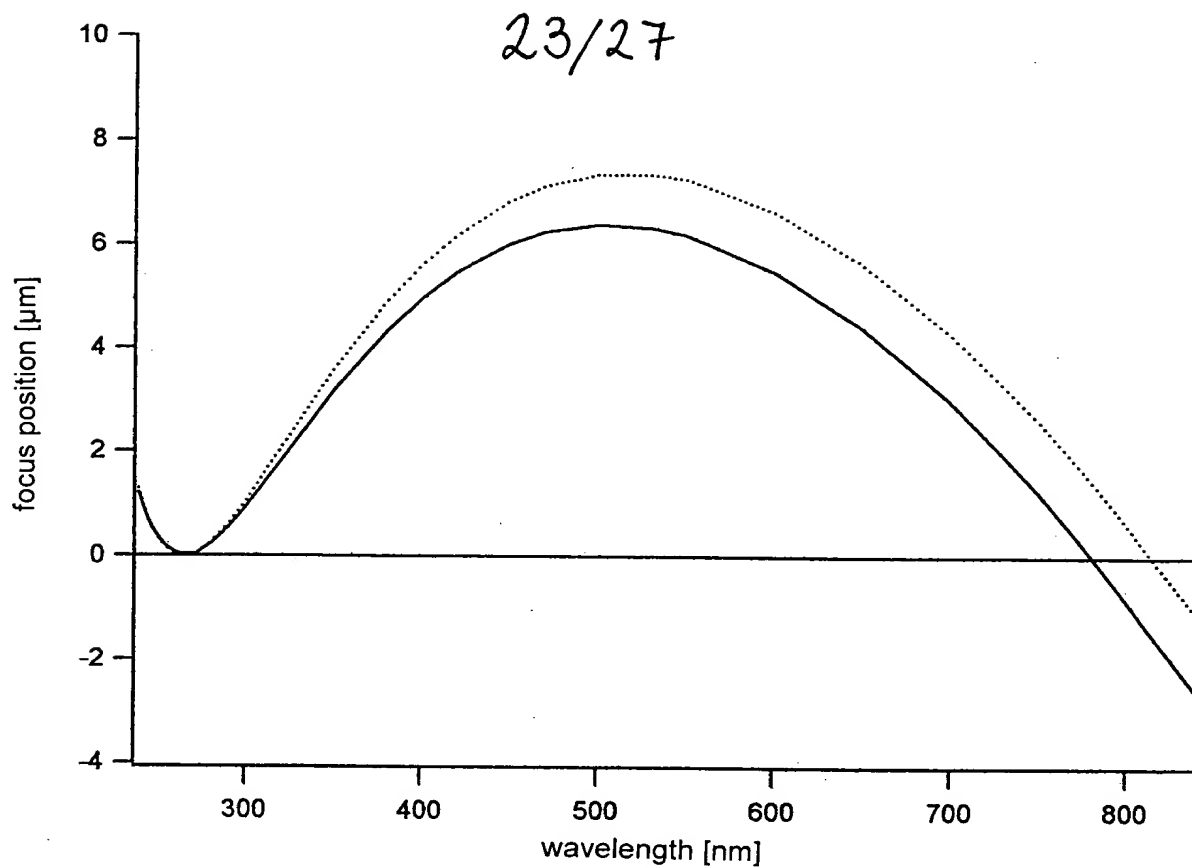


Fig. 23

001290-90486560

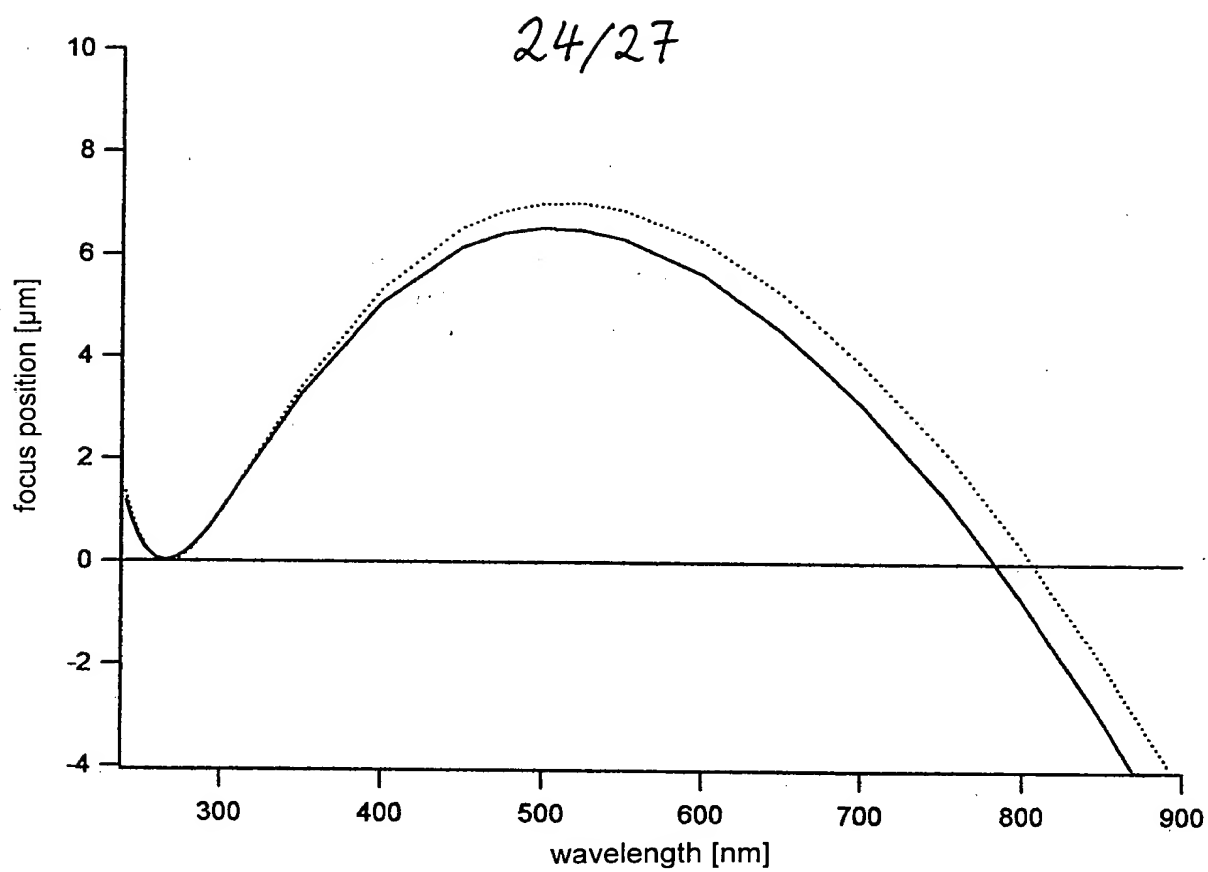


Fig.24

25/27

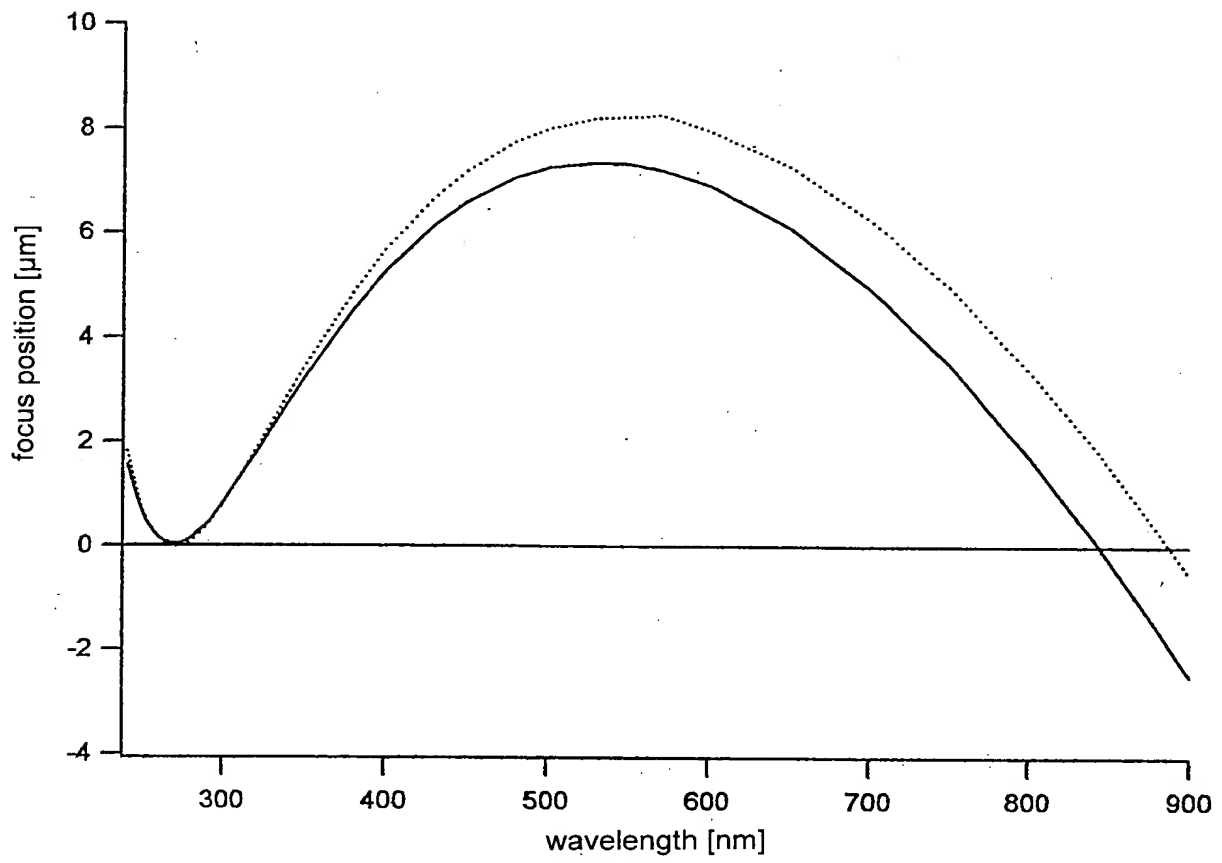


Fig.25

00593406.032100

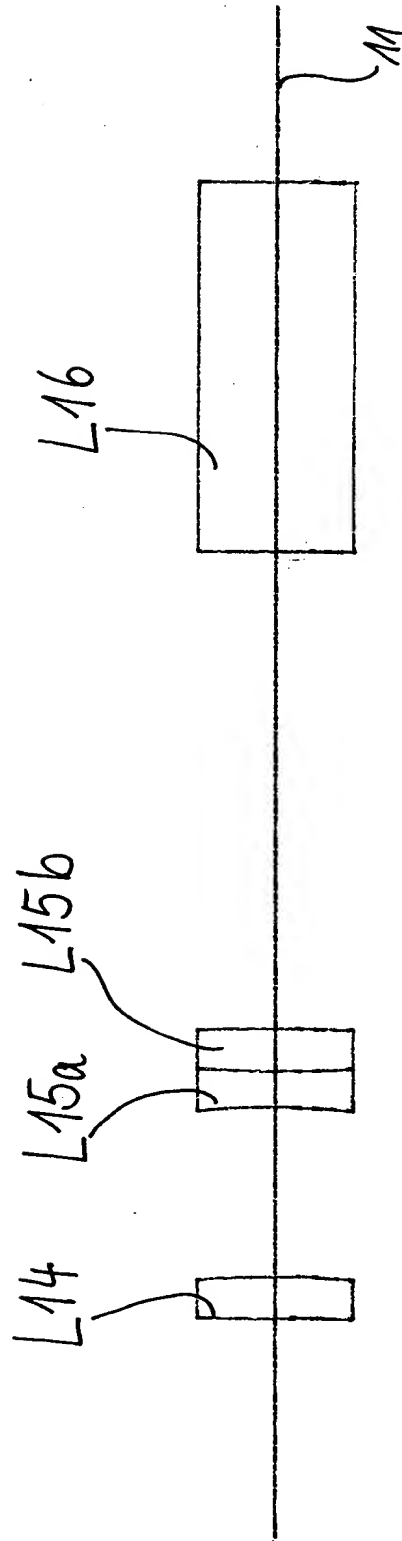


Fig.26

27/27

Table 9:

Tube lens with focal length $f = 200$ mm, compensated for $\lambda_{\text{DUV}} = 266$ nm;

Surface	Radius	Spacing	Glass type
1	211.0390	3.0000	Quartz glass
2	-54.8030	11.9840	
3	-41.6350	2.5100	CaF ₂
4	67.9580	3.0000	Quartz glass
5	-162.8050	33.6460	
6	Plane surface	26.0000	Quartz glass
7	Plane surface	119.0300	
8	Plane surface		

Fig. 27

007290" 90486560